JOHNSON COUNTY HEALTH DEPARTMENT

86 West Court Street — Court House Annex
Franklin, Indiana 46131
736-5770

January 30, 1985

Mr. Robert Carter
Room 329
Indiana State Board of Health
1330 W. Michigan Street
Indianapolis, In. 46206

On January 23, 1985 the Johnson County Health Department was advised by Mr. Dennis Zurakowski, a representative of the Allied Corporation in New York, that a chemical spill evaluation and cleanup activitiy was underway within the city of Franklin, Indiana. The reason for this activity was the result of past mishandling of organic chemicals at the Bendix Company.

According to Mr. Zurakowski, a chemical plume has been identified in the groundwater near the Franklin Bendix facility. The path of this plume is being evaluated and recovery of the contaminants are under investigation. Mr. Zurakowski has agreed to provide detailed information on this investigation to the Johnson County Health Department.

The Johnson County Health Department is concerned that it was only recently that we were advised of this environmental hazard. It would have seemed appropriate for the Indiana State Board of Health to notify the local health department of this potentially hazardous situation when the problem was first uncovered. Perhaps there was no legal requirement for the Indiana State Board of Health to notify the local health department, but this lack of notification appears to represent a breach of protocol between the two health agencies.

Since our notification, this department has advised the Indiana Cities Water Corporation of this situation. The water utility has indicated that additional chemical analysis on their water will be conducted. Further, we are attempting to locate private wells in the identified affected area.

A major municipal well field is located approximately 3500 feet from this chemical spill site. To add to our concern, this area is on a well drained soil formed in loamy outwash over stratified gravelly sand. Geologically, it would appear that the opportunity for chemical migration through the soil is considerable.

This office hopes that this environmental hazard will be of only minor significance. The Johnson County Board of Health desires to provide a prompt and professional service to the citizens of our community. This service cannot be provided without full cooperation from the State health agency.

The Johnson County Health Department welcom your suggestion that a joint m(ing be held at Franklin between officials from Bendix (now under the title of the Allied Corporation), the Indiana Cities Water Company, as well as the state and local health personnel. By meeting together, we will have a better opportunity to understand this situation.

The Johnson County Health Department would be happy to host this meeting. If you can contact the appropriate representatives from the Bendix Corporation, I will notify the Indiana Cities Water Utility and reserve our conference room for whatever date is convenient to your schedule.

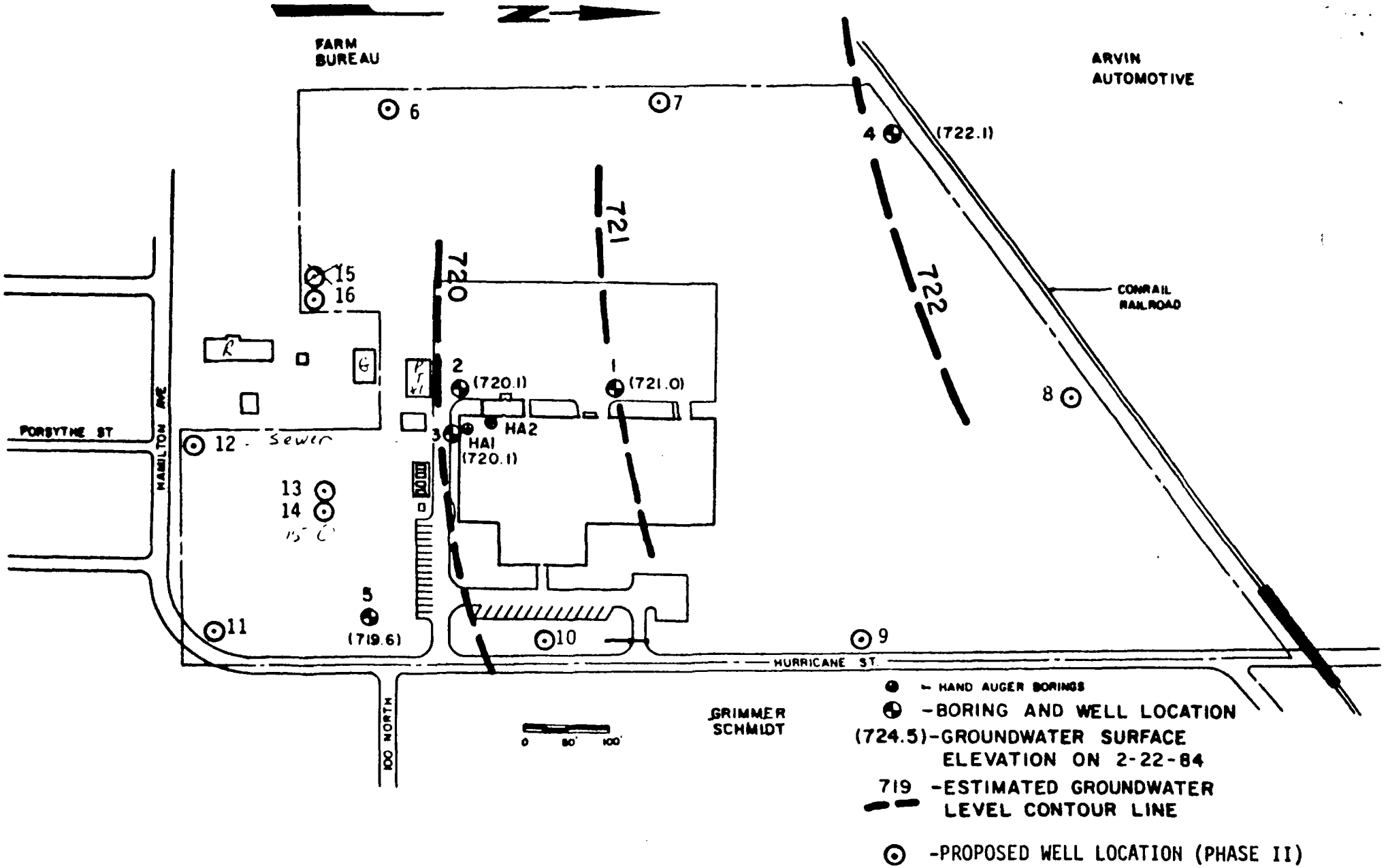
I thank you for returning my call and bringing me up to date on this environmental problem. Your anticipated assistance and cooperation in this regard is appreciated.

Yours truly,

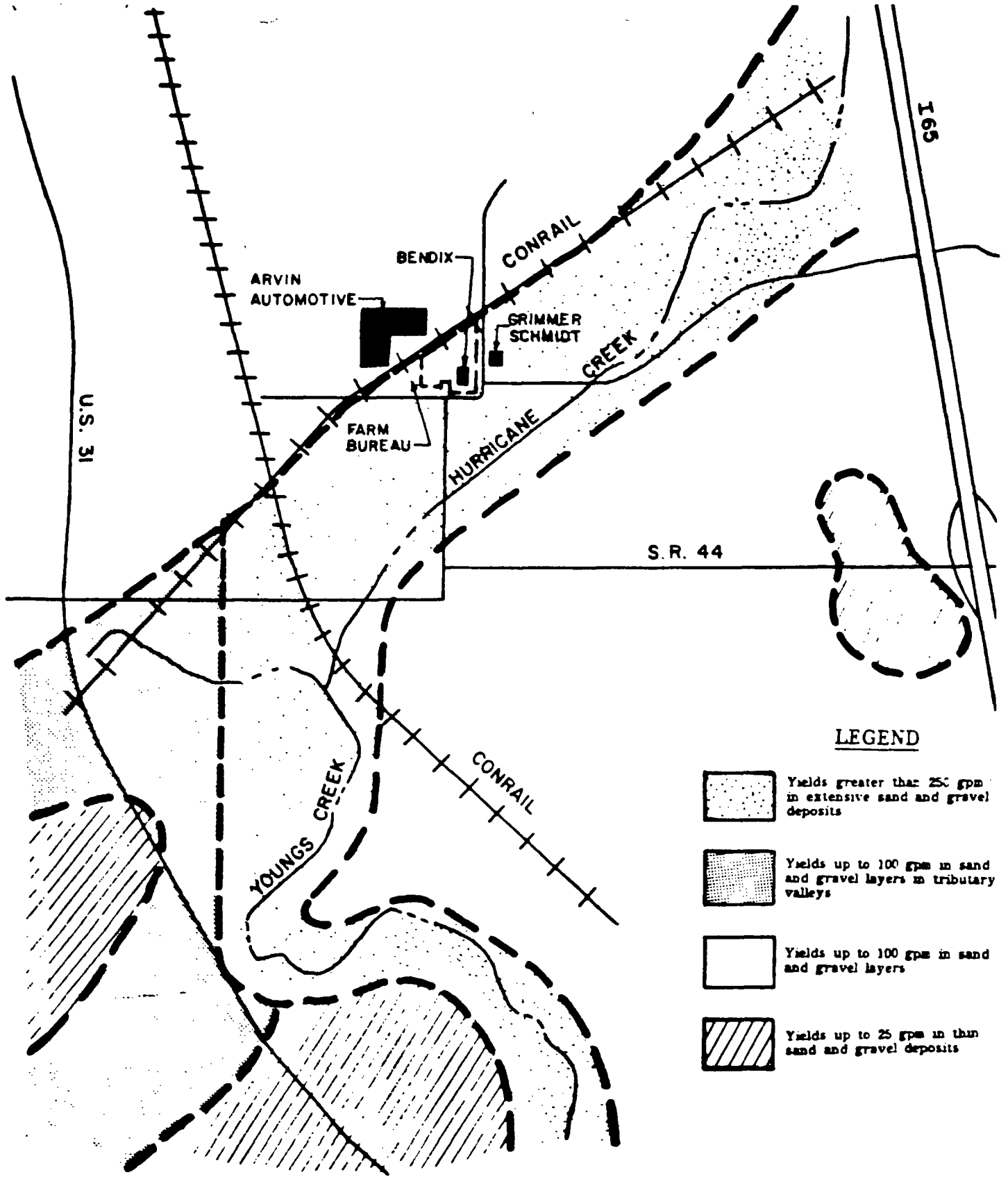
John Bonsett
Dir. of Environmental Health

JB/reh

cc: Wm. D. Province, M. D., Johnson Co. Health Officer
Jim Walsh, Indiana Cities Water
Karyl Schmidt, Land Pollution, In. St. Bd. of Health
Dennis Zurakowski, Allied Corporation



ATEC ASSOCIATES



-After Uhl (1966)

Groundwater Availability in the Vicinity of Franklin, Indiana

Table 3. Summary of Concentrations of Volatile Organic Priority Pollutants Detected in Selected Soil Samples Obtained From Test Borings[a]

Parameter	Depth: 3.5 - 5.0 ft			Depth: 8.5 - 10.0 ft			Depth: 13.5 - 15.0 ft			Depth: 0.5 - 1.0 ft		Depth: 1.5 - 2.0 ft	
	B-1	B-2	B-3	B-1	B-2	B-3	B-1	B-2	B-3	HA-1	HA-2	HA-1	HA-2
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	29	ND	ND	76
Chlorobenzene	ND	ND	52	ND	ND	ND	ND	ND	ND	ND	21	19	ND
1,1,1, Trichloroethane	140	ND	ND	ND	ND	ND	ND	44	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	24	ND	ND	ND	ND	ND	ND	ND	83	35	85
Methylene Chloride	88	160	ND	91	640	63	ND	150	130	180	ND	130	ND
Tetrachloroethylene	4800	1300	2500	3400	5700	4100	1600	4900	6700	735	36,300	850	400
Toluene	ND	ND	63	ND	ND	ND	ND	ND	ND	25	46	ND	22
Trichloroethylene	ND	ND	19,600	ND	900	88	1700	920	130	780	880	1000	530

[a]All concentrations in parts per billion (ppb)

ND = Not detectable at the concentrations noted in the test data contained in Appendix D

Note
Soil Samples were obtained on the following dates:
B-1, B-2 (2/9/84); B-3 (2/8/84); HA-1 (2/10/84); HA-2 (2/13/84)

Table 4. Summary of Field and Laboratory Groundwater Temperature, pH, and Conductivity Readings

Field Measurements[a]				Laboratory Measurements[b]	
S-C-T Meter		YSI Meter			
Temperature °C	pH[c]	Temperature °C	Conductivity[c] μmho/cm	pH	Conductivity μmho/cm
11.5	5.4	12.5	1410	7.4	800
12.8	6.5	13.0	1110	7.6	700
14.2	6.8	14.0	800	7.6	600
11.5	5.8	11.0	370	7.4	700
13.6	6.7	13.5	1100	d	d

[a] Readings were obtained in well casing prior to the collection of the groundwater samples

[b] Measurements made on groundwater samples obtained on February 22, 1984

[c] Already adjusted for temperature by instrument

[d] Groundwater sample not obtained for laboratory analysis

Table 5. Summary of Water Quality Test Results on the Groundwater Samples Obtained on February 22, 1984[a]

Parameter	Well No. 1	Well No. 2	Well No. 3	Well No. 4[d]
Primary				
Arsenic	≤0.03	≤0.01	≤0.01	≤0.01
Cadmium	≤0.01	≤0.01	≤0.01	≤0.1
Chromium	0.01	≤0.01	0.02	0.02
Lead	≤0.1	≤0.1	≤0.1	<0.1
Mercury	≤0.0005	≤0.0005	≤0.0005	≤0.0005
Nitrate (As N)	4.9	2.1	1.9	7.8
Selenium	≤0.02	≤0.02	≤0.02	≤0.03
Silver	≤0.01	≤0.01	≤0.01	≤0.01
Endrin[c]	<0.01	<0.01	<0.02	<0.02
Lindane[c]	<0.01	<0.01	<0.02	<0.02
Toxaphene[c]	<0.05	<0.05	<0.10	<0.10
Secondary				
Chloride	20	32	20	24
Copper	0.06	0.04	0.07	0.07
Iron	8.9	7.9	4.12	1.08
Sulfate	40	42	23	65
Zinc	0.072	0.084	0.089	0.083
pH	7.4	7.6	7.6	7.4
Other				
Antimony	0.01	0.01	0.1	0.1
Beryllium	0.01	0.01	0.01	0.01
Calcium	145	120	88	97
Magnesium	37.2	34.0	21.9	26.9
Nickel	0.08	0.15	0.05	0.05
Tin	1	1	1	1
Thallium	0.1	0.1	0.1	0.1
Hardness[b]	515	440	310	353

[a] All concentrations in mg/l (parts per million)

[b] Concentration in mg $CaCO_3$/liter

[c] Concentrations based on GC/MS detection limits

[d] Located hydraulically upgradient from facility

Table 6. Summary of Concentrations of Organic Chemicals Detected in the Groundwater Samples Obtained On February 22, 1984[a]

Parameter	Well No. B-1	Well No. B-2	Well No. B-3	Well No. B-4[b]
Ethylbenzene	6.0	5.8	12.2	ND
Tetrachloroethylene	3200	3200	640	611
Toluene	3.9	3.4	27	5.4
Trichloroethylene	160	5700	16,600	1040
Carbon Tetrachloride	ND	45	ND	ND
1,1,1 - Trichloroethane	ND	85	3700	ND
1,1 Dichloroethane	ND	7.8	42	ND
Chloroform	ND	1.7	ND	ND
Trans - 1,2-Dichloroethylene	ND	1.0	1.4	ND
Chlorobenzene	ND	ND	4.3	ND

[a]All concentrations in parts per billion (ppb)

[b]Located hydraulically upgradient from facility

ND = Not detectable at the concentrations noted in the test data contained in Appendix C

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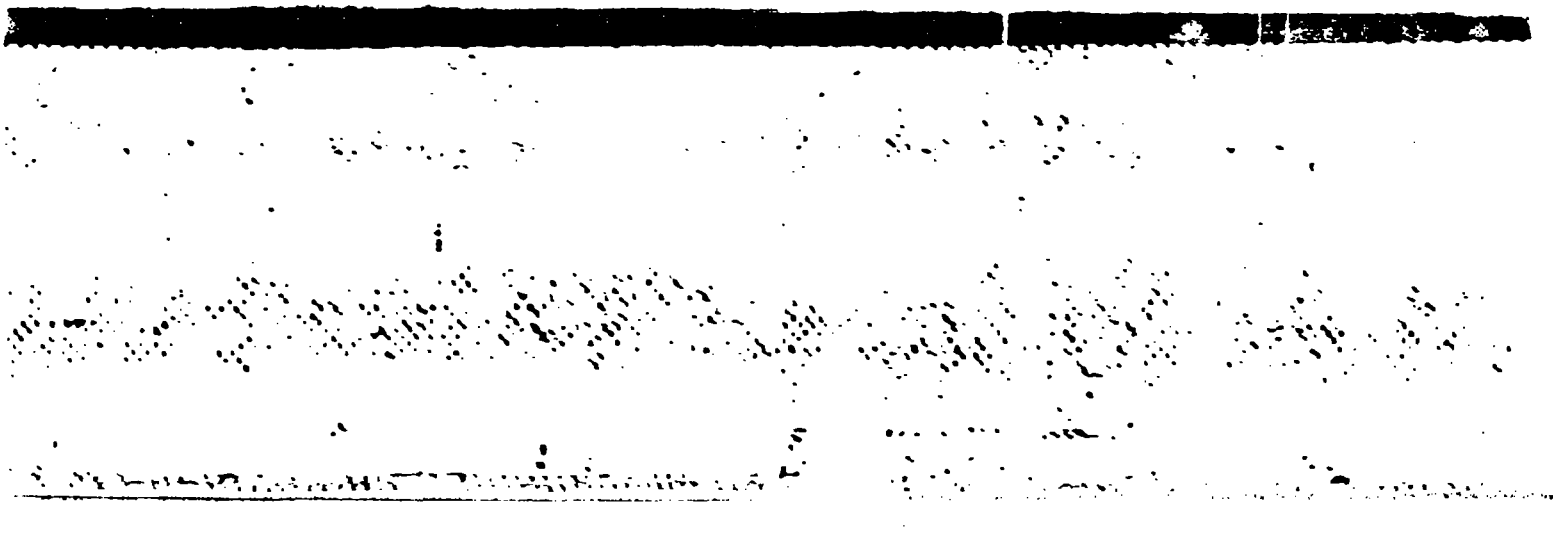
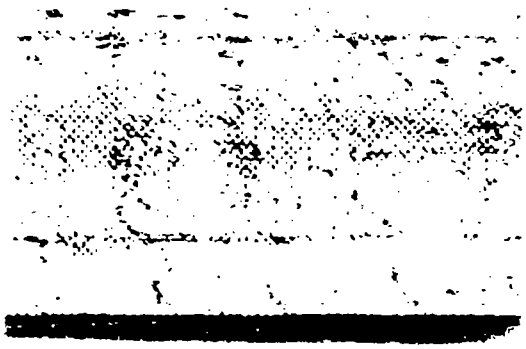
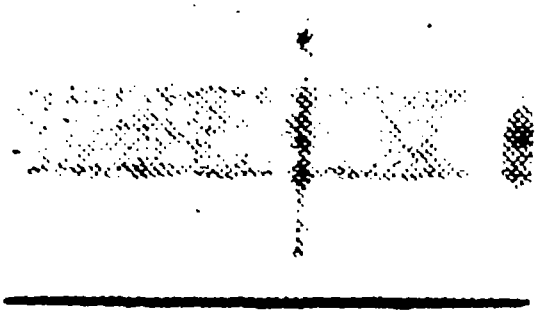






RESPIRATORY PROTECTION FOR CYANIDE

Condition	Minimum Respiratory Protection* Required Above 5 mg/m³
Particulate Concentration	
50 mg/m³ or less	Any supplied-air respirator. Any self-contained breathing apparatus.
Greater than 50 mg/m³ or entry and escape from unknown concentrations	Self-contained breathing apparatus with a full facepiece operated in pressure-demand or other positive pressure mode. A combination respirator which includes a Type C supplied-air respirator with a full facepiece operated in pressure-demand or other positive pressure or continuous-flow mode and an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive pressure mode
Fire Fighting	Self-contained breathing apparatus with a full facepiece operated in pressure-demand or other positive pressure mode
Escape	Any gas mask providing protection against hydrogen cyanide and particulates. Any escape self-contained breathing apparatus

*Only NIOSH-approved or MSHA-approved equipment should be used

Occupational Health Guideline for Cyanide

INTRODUCTION

This guideline is intended as a source of information for employees, employers, physicians, industrial hygienists, and other occupational health professionals who may have a need for such information. It does not attempt to present all data, rather, it presents pertinent information and data in summary form.

APPLICABILITY

The general guidelines contained in this document apply to all cyanides. Physical and chemical properties of two specific compounds are provided for illustrative purposes.

SUBSTANCE IDENTIFICATION

Potassium cyanide

- Formula: KCN
- Synonyms: None
- Appearance and odor: White solid with a faint almond odor.

Sodium cyanide

- Formula: NaCN
- Synonyms: None
- Appearance and odor: White solid with a faint almond odor.

PERMISSIBLE EXPOSURE LIMIT (PEL)

The current OSHA standard for cyanide is 5 milligrams of cyanide per cubic meter of air (mg/m³) averaged over an eight-hour work shift. NIOSH has recommended that the permissible exposure limit be changed to a ceiling of 5 milligrams cyanide per cubic meter of air averaged over a 10-minute period. The NIOSH Criteria Document for Hydrogen Cyanide and Cyanide Salts should be consulted for more detailed information.

HEALTH HAZARD INFORMATION

- **Routes of exposure**

Cyanide can affect the body if it is inhaled, if it comes in contact with the eyes or skin, or if it is swallowed. Sufficient cyanide may be absorbed through the skin, especially if there are cuts to cause fatal poisoning.

- **Effects of overexposure**

1. Short-term Exposure: Inhalation or ingestion of cyanide salts may be rapidly fatal. Larger doses by inhalation or swallowing may cause the person to rapidly lose consciousness, stop breathing, and die. In some cases, there are convulsions. At lower levels of exposure, the earlier symptoms include weakness, headache, confusion, nausea, and vomiting. These symptoms may be followed by unconsciousness and death. Occasionally, convulsions occur. Milder forms of intoxication may result only in weakness, dizziness, headache, and nausea. The dust of cyanide salts is irritating to the eyes. In the presence of tears, it may cause the symptoms of poisoning described above. The dust of cyanide salts may produce irritation of the nose and skin. Strong solutions of cyanide salts are corrosive and may produce ulcers.

2. Long-term Exposure: Effects from chronic exposure to cyanide are non-specific and rare.

3. Reporting Signs and Symptoms: A physician should be contacted if anyone develops any signs or symptoms and suspects that they are caused by exposure to cyanide.

- **Recommended medical surveillance**

The following medical procedures should be made available to each employee who is exposed to cyanide at potentially hazardous levels.

1. Initial Medical Examination:

—A complete history and physical examination. The purpose is to detect pre-existing conditions that might place the exposed employee at increased risk, and to establish a baseline for future health monitoring. Persons with a history of fainting spells, such as occur in various types of cardiovascular and nervous disorders,

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service Centers for Disease Control
National Institute for Occupational Safety and Health

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

and those unusually susceptible to effects of anoxia or with anemia would be expected to be at increased risk from exposure. Examination of the cardiovascular, nervous, and upper respiratory systems, and thyroid should be stressed. The skin should be examined for evidence of chronic disorders.

—Skin disease: Cyanide is a defatting agent and can cause dermatitis on prolonged exposure. Persons with pre-existing skin disorders may be more susceptible to the effects of this agent.

—14" x 17" chest roentgenogram: Cyanide causes human lung damage. Surveillance of the lungs is indicated.

—FVC and FEV (1 sec): Cyanide is a respiratory irritant. Persons with impaired pulmonary function may be at increased risk from exposure. Periodic surveillance is indicated.

2. Periodic Medical Examination: The aforementioned medical examinations should be repeated on an annual basis.

3. First Aid Kits: First aid kits should be readily available in workplaces where there is a potential for the release of cyanide. These kits should contain a minimum of 48 ampules, each of 0.3 ml amyl nitrate and complete instructions for use. In addition, 2 physician's kits should be immediately available to trained medical personnel. These kits should contain the above quantity of amyl nitrate as well as sterile sodium nitrite solution (3%) and sterile sodium thiosulfate solution (25%). All of the above drugs should be replaced at least biannually to ensure their potency.

• **Summary of toxicology**

The dust of cyanide salts, a source of cyanide ion, is an asphyxiant due to an inhibitory action on metabolic enzyme systems and can be rapidly fatal. Cyanide exerts this effect because it inactivates certain enzymes by forming very stable complexes with the metal in them. Cytochrome oxidase is probably the most important of these, since it occupies a fundamental position in the respiratory process and is involved in the ultimate electron transfer to molecular oxygen. Since cytochrome oxidase is present in practically all cells that function under aerobic conditions, and since the cyanide ion diffuses easily to all parts of the body, it is capable of suddenly bringing to a halt practically all cellular respiration. In the presence of even weak acids, hydrocyanic acid (HCN) gas is liberated from cyanide salts; a few inhalations of higher concentrations of HCN may be followed by almost instantaneous collapse and cessation of respiration. 270 ppm HCN is immediately fatal to humans, 181 ppm is fatal after 10 minutes, 135 ppm after 30 minutes, and 110 ppm may be fatal in 1 hour. The ingestion by humans of 50 to 100 mg of sodium or potassium cyanide may also be fatal. At lower levels of exposure to HCN, the earliest symptoms of intoxication may include weakness, headache, confusion, and occasionally nausea and vomiting; respiratory rate and depth is usually increased initially and at later stages becomes slow and gasping. If cyanosis is present, it usually indicates that respiration has either ceased or is just been very inadequate for a few minutes. Humans tolerate 45 to 54 ppm for ½ to 1 hour without immediate or delayed effects, while 18 to 36 ppm may result in some symptoms after an exposure of several hours. Sodium cyanide dust is irritating to the eyes; in the presence of tears it may liberate HCN, which can be absorbed and cause systemic intoxication. Skin contact with dust may be irritating; strong solutions on the skin produce ulcers which are slow in healing. Cyanide is one of the few toxic materials for which an antidote exists; it functions as follows: First, amyl nitrite (inhalation) and sodium nitrite (intravenously) are administered to form methemoglobin, which binds firmly with free cyanide ions. This traps any circulating cyanide ions. The formation of 10 to 20% methemoglobin usually does not involve appreciable risk, yet provides a large amount of cyanide-binding substance. Second, sodium thiosulfate is administered intravenously to increase the rate of conversion of cyanide to the less toxic thiocyanate. Methylene blue should not be administered, because it is a poor methemoglobin former and, moreover, promotes the conversion of methemoglobin back to hemoglobin.

CHEMICAL AND PHYSICAL PROPERTIES

• **Physical data—Potassium cyanide**

1. Molecular weight: 65.1
2. Boiling point (760 mm Hg): Data not available
3. Specific gravity (water = 1): 1.55
4. Vapor density (air = 1 at boiling point of potassium cyanide): Not applicable
5. Melting point: 635 C (1175 F)
6. Vapor pressure at 20 C (68 F): Essentially zero
7. Solubility in water, g/100 g water at 20 C (68 F): 71.6
8. Evaporation rate (butyl acetate = 1): Not applicable

• **Physical data—Sodium cyanide**

1. Molecular weight: 49
2. Boiling point (760 mm Hg): 1500 C (2732 F) (extrapolated)
3. Specific gravity (water = 1): 1.6
4. Vapor density (air = 1 at boiling point of sodium cyanide): Not applicable
5. Melting point: 560 C (1040 F)
6. Vapor pressure at 20 C (68 F): Essentially zero
7. Solubility in water, g/100 g water at 20 C (68 F): 58
8. Evaporation rate (butyl acetate = 1): Not applicable

• **Reactivity**

1. Conditions contributing to instability: None. Hazardous if kept in closed containers. It may form toxic concentrations of hydrogen cyanide gas when in prolonged contact with air in a closed area.
2. Incompatibilities: Contact with strong oxidizers such as nitrates and chlorates may cause fires and

explosions. Contact with acids and acid salts causes immediate formation of toxic and flammable hydrogen cyanide gas.

3. Hazardous decomposition products: Toxic gases and vapors (such as hydrogen cyanide and carbon monoxide) may be released when cyanide decomposes.

4. Special precautions: Cyanide may react with carbon dioxide in ordinary air to form toxic hydrogen cyanide gas.

• **Flammability**

1. Not combustible

• **Warning properties**

1. Odor Threshold: No quantitative information is available concerning the odor threshold of sodium or potassium cyanide. HCN, however, is evolved from these substances in the presence of moisture. The Manufacturing Chemists' Association states that "although HCN has a characteristic odor, its toxic action at hazardous concentrations is so rapid that it is of no value as a warning property."

2. Eye Irritation Level: Cyanide (as CN) is not known to be an eye irritant. However, according to Grant, HCN can produce eye irritation after chronic exposures.

3. Evaluation of Warning Properties: Although cyanide (as CN) has a negligible vapor pressure, in the presence of moisture HCN can be given off. HCN does not have adequate warning properties.

MONITORING AND MEASUREMENT PROCEDURES

• **Eight-Hour Exposure Evaluation**

Measurements to determine employee exposure are best taken so that the average eight-hour exposure is based on a single eight-hour sample or on two four-hour samples. Several short-time interval samples (up to 30 minutes) may also be used to determine the average exposure level. Air samples should be taken in the employee's breathing zone (air that would most nearly represent that inhaled by the employee).

• **Ceiling Evaluation**

Measurements to determine employee ceiling exposure are best taken during periods of maximum expected airborne concentrations of cyanide. Each measurement should consist of a ten (10) minute sample or series of consecutive samples totalling ten (10) minutes in the employee's breathing zone (air that would most nearly represent that inhaled by the employee). A minimum of three (3) measurements should be taken on one work shift and the highest of all measurements taken is an estimate of the employee's exposure.

• **Method**

Sampling and analysis may be performed by collection of cyanide with a cellulose membrane filter and an impinger containing sodium hydroxide, followed by analysis by direct potentiometry. An analytical method for cyanide is in the *NIOSH Manual of Analytical Methods*, 2nd Ed., Vol. 3, 1977, available from the Government Printing Office, Washington, D.C. 20402 (GPO No. 017-033-00261-4).

RESPIRATORS

• Good industrial hygiene practices recommend that engineering controls be used to reduce environmental concentrations to the permissible exposure level. However, there are some exceptions where respirators may be used to control exposure. Respirators may be used when engineering and work practice controls are not technically feasible, when such controls are in the process of being installed, or when they fail and need to be supplemented. Respirators may also be used for operations which require entry into tanks or closed vessels, and in emergency situations. If the use of respirators is necessary, the only respirators permitted are those that have been approved by the Mine Safety and Health Administration (formerly Mining Enforcement and Safety Administration) or by the National Institute for Occupational Safety and Health.

• In addition to respirator selection, a complete respiratory protection program should be instituted which includes regular training, maintenance, inspection, cleaning, and evaluation.

PERSONAL PROTECTIVE EQUIPMENT

• Employees should be provided with and required to use impervious clothing, gloves, face shields (eight-inch minimum), and other appropriate protective clothing necessary to prevent any possibility of skin contact with cyanide or liquids containing cyanide.

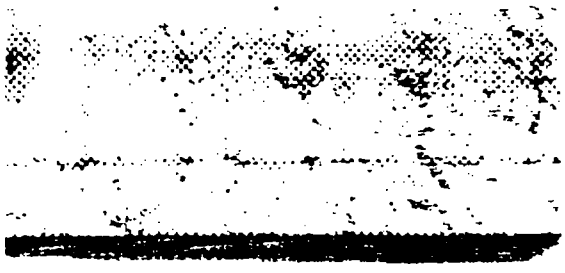
• If employees' clothing has had any possibility of being contaminated with cyanide, employees should change into uncontaminated clothing before leaving the work premises.

• Clothing which has had any possibility of being contaminated with cyanide should be placed in closed containers for storage until it can be discarded or until provision is made for the removal of cyanide from the clothing. If the clothing is to be laundered or otherwise cleaned to remove the cyanide, the person performing the operation should be informed of cyanide's hazardous properties.

• Where there is any possibility of exposure of an employee's body to cyanide or liquids containing cyanide, facilities for quick drenching of the body should be provided within the immediate work area for emergency use.

• Non-impervious clothing which becomes contaminated with cyanide should be removed immediately and not reworn until the cyanide is removed from the clothing.

• Employees should be provided with and required to use dust- and splash-proof safety goggles where there is any possibility of cyanide or liquids containing cyanide contacting the eyes.



• Where there is any possibility that employees' eyes may be exposed to cyanide or liquids containing cyanide, an eye-wash fountain should be provided within the immediate work area for emergency use.

SANITATION

• Skin that becomes contaminated with cyanide should be immediately washed or showered with soap or mild detergent and water to remove any cyanide.

• Workers subject to skin contact with cyanide should wash with soap or mild detergent and water any areas of the body which may have contacted cyanide at the end of each work day.

• Eating and smoking should not be permitted in areas where cyanide or liquids containing cyanide are handled, processed, or stored.

• Employees who handle cyanide or liquids containing cyanide should wash their hands thoroughly with soap or mild detergent and water before eating, smoking, or using toilet facilities.

COMMON OPERATIONS AND CONTROLS

The following list includes some common operations in which exposure to cyanide may occur and control methods which may be effective in each case.

Operation	Controls
Use as fumigants and pesticides in greenhouses, ships, mills, and warehouses; use of cyanogen chloride as a warning agent in fumigant gases	Local exhaust ventilation; general dilution ventilation; personal protective equipment
Use in metal treatment in nitriding, tempering, and case hardening steel; coloring of metals by chemical or electrolytic process; cleaning and coating metals; welding and cutting of heat-resistant metals; liberation during ore extraction and metal purification	Process enclosure; local exhaust ventilation; general dilution ventilation; personal protective equipment
Use of calcium cyanamid in fertilizer on soil; during chemical synthesis for manufacture of intermediates in pharmaceuticals, dyes, vitamins, plastics, and sequestering agents; preparation of nitriles, carbylamines, cyano fatty acids, and inorganic cyanides	Process enclosure; local exhaust ventilation; general dilution ventilation; personal protective equipment
Use in cellulose technology; paper manufacture in dyeing; as cement stabilizers; use in photography as fixatives, and in blueprinting and process engraving; liberation in blast furnace gases or in handling of illuminating gas	Process enclosure; local exhaust ventilation; general dilution ventilation; personal protective equipment

EMERGENCY FIRST AID PROCEDURES

In the event of an emergency, institute first aid procedures and send for first aid or medical assistance.

• **Eye Exposure**

If cyanide gets into the eyes, wash eyes immediately with large amounts of water, lifting the lower and upper lids occasionally. Get medical attention immediately. Contact lenses should not be worn when working with cyanides.

• **Skin Exposure**

If cyanide gets on the skin, immediately wash the contaminated skin using soap or mild detergent and water. If cyanide penetrates through the clothing, remove the clothing immediately and wash the skin using soap or mild detergent and water. Get medical attention immediately.

• **Breathing**

If a person breathes in large amounts of cyanide, move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible.

• **Swallowing**

When cyanide has been swallowed and the person is conscious, give the person large quantities of water immediately. After the water has been swallowed, try to get the person to vomit by having him touch the back of his throat with his finger. Do not make an unconscious person vomit. Get medical attention immediately.

• **Rescue**

Move the affected person from the hazardous exposure. If the exposed person has been overcome, notify someone else and put into effect the established emergency rescue procedures. Do not become a casualty. Understand the facility's emergency rescue procedures and know the locations of rescue equipment before the need arises.

SPILL AND DISPOSAL PROCEDURES

• Persons not wearing protective equipment and clothing should be restricted from areas of spills until cleanup has been completed

• If cyanide is spilled, the following steps should be taken

1. Ventilate area of spill.
2. Collect spilled material in the most convenient and safe manner for reclamation, or for treatment in a cyanide disposal system

• Waste disposal method

After treatment as in above, cyanide may be disposed of in a secured sanitary landfill

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TABLE I

ALLIED CORPORATION FACILITIES FOR WHICH FINANCIAL ASSURANCE FOR LIABILITY COVERAGE AND CLOSURE AND/OR POST-CLOSURE COST IS BEING DEMONSTRATED BY THE FINANCIAL TEST

STATE	EPA ID NUMBER	PLANT NAME & ADDRESS	CURRENT COST ESTIMATES CLOSURE	POST-CLOSURE CARE	TOTAL
Indiana	IND000810754	C & D Batteries Plant 200 W. Main Street Attica, IN 47918	$10,192	N/A	10,192
	IND006377048	Prestolite Battery Plant Hwy. 41 North Vincennes, IN 47591	$59,942	15,600	75,542
	IND044587848	Bendix Electrical Components Division Hurricane Road Franklin, IN 46131	$17,272	N/A	17,272
	IND005461165	Bendix South Bend Complex P.O. Box 4001 401 N. Bendix Drive South Bend, IN 46620	$17,846	N/A	17,846
		Total, State of Indiana	$105,252	$15,600	$120,852